

IN THE CLAIMS:

Please amend claims 41, 47, 62-64, 66-69 and 75 as follows:

1-40. (Previously Canceled)

41. (Currently Amended) An enhanced VSB transmitter for transmitting main data and supplemental data comprising:

a pre-RS (Reed-Solomon) encoder for pre-encoding the supplemental data by using a first code;

a first multiplexer for multiplexing the main data and ~~the pre-RS encoded pre-encoded~~ supplemental data;

a main RS encoder for ~~main~~ encoding the multiplexed data by using a second code; and

a data format converter for formatting the ~~main RS encoded data multiplexed data~~ ~~encoded by the main RS encoder~~ for transmission and transmitting the formatted data to one or more VSB receivers.

42. (Previously Added) The enhanced VSB transmitter of claim 41, wherein the first code comprises a block size N1, a payload K1, and an error correction capability T1.

43. (Previously Added) The enhanced VSB transmitter of claim 42, wherein the second code comprises a block size N2, a payload K2, and an error correction capability T2.

44. (Previously Added) The enhanced VSB transmitter of claim 43, wherein the N1, K1, and T1 of the first code and the N2, K2, and T2 of the second code are equal.

45. (Previously Added) The enhanced VSB transmitter of claim 43, wherein the N1, K1, and T1 of the first code and the N2, K2, and T2 of the second code are different.

46. (Previously Added) The enhanced VSB transmitter of claim 41, wherein the supplemental data comprises X bytes and the pre-RS encoder provides Y parity bytes, wherein a total of X and Y bytes is 184 bytes.

47. (Currently Amended) The enhanced VSB transmitter of claim 41, further comprising:

an interleaver for interleaving the ~~pre-RS encoded~~ pre-encoded supplemental data;
a null data inserter for inserting ~~the a~~ plurality of null bits into the interleaved supplemental data, and
a header inserter for inserting a header into the supplemental data having the plurality of null bits.

48. (Previously Added) The enhanced VSB transmitter of claim 47, wherein the null data inserter inserts the plurality of null bits into each interleaved supplemental data in a predetermined order.

49. (Previously Added) The enhanced VSB transmitter of claim 47, wherein the plurality of null bits are arranged at alternating positions within each interleaved supplemental data.

50. (Previously Added) The enhanced VSB transmitter of claim 47, wherein the plurality of null bits are “0”.

51. (Previously Added) The enhanced VSB transmitter of claim 7, wherein the header inserter adds three bytes of header information to the supplemental data having the plurality of null bits, wherein the header information contains program identification.

52. (Previously Added) The enhanced VSB transmitter of claim 41, wherein the first multiplexer multiplexes the main data and the supplemental data according to a predetermined multiplexing information.

53. (Previously Added) The enhanced VSB transmitter of claim 52, wherein the predetermined multiplexing information is inserted in a reserved area of a field synchronizing signal or a data segment of the supplemental data.

54. (Previously Added) The enhanced VSB transmitter of claim 52, wherein the predetermined multiplexing information comprises at least one of a multiplexing ratio and unit.

55. (Previously Added) The enhanced VSB transmitter of claim 54, wherein the multiplexing unit and the multiplexing ratio are predetermined based on amounts of the main data and the supplemental data.

56. (Previously Added) The enhanced VSB transmitter of claim 54, wherein the multiplexing ratio of the supplemental data to the main data in the first multiplexer is one to one.

57. (Previously Added) The enhanced VSB transmitter of claim 54, wherein the multiplexing ratio of the supplemental data and the main data in the first multiplexer is one to three.

58. (Previously Added) The enhanced VSB transmitter of claim 41, wherein the first multiplexer is responsive to a field synchronizing signal used for synchronizing a data frame of the data format converter.

59. (Previously Added) The enhanced VSB transmitter of claim 41, wherein one field of the multiplexed data has 312 data segments and one field synchronizing segment.

60. (Previously Added) The enhanced VSB transmitter of claim 41, wherein the main data is MPEG data.

61. (Previously Added) The enhanced VSB transmitter of claim 41, further comprising a data randomizer for randomizing the multiplexed data.

62. (Currently Amended) The enhanced VSB transmitter of claim 41, further comprising:

a data interleaver for interleaving the ~~main RS coded data~~ multiplexed data encoded by the main RS encoder; and

a Trellis coder for converting the interleaved data into symbols.

63. (Currently Amended) The enhanced VSB transmitter of claim 41, wherein the data format converter comprises:

a second multiplexer for multiplexing the ~~main RS coded data~~ multiplexed data encoded by the main RS encoder with a field synchronizing signal and segment synchronizing signals; a pilot inserter for inserting pilot signals into the multiplexed data multiplexed by the second multiplexer; a modulator for modulating the symbol data having the pilot signals into a signal of an intermediate frequency band; and a RF (Radio Frequency) converter for converting the modulated signal into a RF band signal for transmission.

64. (Currently Amended) A method of transmitting main data and supplemental data, the method comprising:

pre-RS (Reed-Solomon) encoding the supplemental data by using a first code; multiplexing main data and the pre-RS encoded supplemental data; ~~main~~ RS encoding the multiplexed data by using a second code; formatting the ~~main~~ RS encoded multiplexed data for transmission; and transmitting the formatted data to one or more VSB receivers.

65. (Previously Added) The method of claim 64, wherein the first code comprises a block size N1, a payload K1, and an error correction capability T1.

66. (Currently Amended) The ~~method enhanced~~ VSB transmitter of claim 65, wherein the second code comprises a block size N2, a payload K2, and an error correction capability T2.

67. (Currently Amended) The method enhanced VSB transmitter of claim 66, wherein the N1, K1, and T1 of the first code and the N2, K2, and T2 of the second code are equal.

68. (Currently Amended) The method enhanced VSB transmitter of claim 66, wherein the N1, K1, and T1 of the first code and the N2, K2, and T2 of the second code are different.

69. (Currently Amended) The method of claim 64, wherein Reed-Solomon parity bytes are added to the Reed-Solomon coded pre-RS encoded supplemental data.

70. (Previously Added) The method of claim 69, wherein the added Reed-Solomon parity bytes vary with an amount of the supplemental data.

71. (Previously Added) The method of claim 70, further comprising:
interleaving the pre-RS encoded supplemental data.
expanding the interleaved supplemental data by inserting null data into the interleaved supplemental data; and
adding headers to the expanded supplemental data.

72. (Previously Added) The method of claim 71, wherein the null data is arranged at alternating positions within the interleaved supplemental data.

73. (Previously Added) The method of claim 71, wherein each header comprises an identification code identifying the expanded supplemental data.

74. (Previously Added) The method of claim 64, further comprising:
randomizing the multiplexed data; and
outputting the randomized data for main RS encoding the randomized data.

75. (Currently Amended) The method of claim 64, further comprising:
interleaving the ~~main~~ RS encoded multiplexed data; and
converting the interleaved data into symbols.